

KROL', L.B., kand. tekhn.nauk

Cleaning of boiler heating surfaces by shaking in the German
Democratic Republic. Energokhoz. za rub. no.5:12-16 S-0 '58.
(Germany, East--Boilers)

DIMENT'YEV, V.A., inzh.; IOFFE, G.Ya., inzh.; KROL', L.B., kand. tekhn. nauk.

New method of checking water level in boiler drums. Mek. sta. 29
no.2:20-24 F '58. (MIRA 11:3)
(Liquid level indicators) (Radioisotopes--Industrial applications)

KROL', L.B., kand. tekhn. nauk

Utilization of ashes and slag of electric power plants. Ener-
gokhоз.za rub. no.1:17-23 Jan '59. (MIRA 12:4)
(Ash (Technology)) (Slag)

SOV/96-59-7-9/26

AUTHORS: Zhirnov, N.I. and Krol', L.B., Candidates of Technical Sciences, Glazov, S.V. and Shchedrin, F.B., Engineers

TITLE: A Large Peak-load Boiler House for National Heat Supply to Urban Districts where Extensive Housing Construction is Going on. (Krupnaya pikovaya kotel'naya dlya ratsional'nogo teplosnabzheniya rayonov massovoy zastroyki gorodov)

PERIODICAL: Teploenergetika, 1959, Nr 7. pp 36-41 (USSR)

ABSTRACT: During the period 1959-1965 there will be a great deal of new housing construction in a number of towns. The supply of heat to such housing presents a number of problems. The provision of individual boilers for each house is expensive and wasteful. Existing designs of regional boiler-houses are expensive and are not well-adapted to the eventual use of district-heating power stations. Again, large district-heating power stations to supply the heat and in particular to cover peak loads, could not be constructed immediately. Such stations should incorporate large cheap water-heating boilers to cover the peak loads, thereby reducing the cap-

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307/36-52-7-9/26

A Large Peak-load Boiler House for Rational Heat Supply to Urban Districts where Extensive Housing Construction is Going on

ital cost of the stations by more than 15%. Although suitable boilers have been developed by the All-Union Thermo-Technical Institute in collaboration with the Moscow Branch of the 'Orgenergostroy' Institute, district-heating power stations cannot solve the immediate problem because their construction must lag behind that of the housing. It was accordingly necessary to develop large, cheap water-heating boiler-houses, with peak boilers of the All-Union Thermo-Technical Institute design, sited directly amongst the housing or adjoining existing or future district-heating power stations. At first, these boilers will be the main source of heat supply; later, when the district-heating stations have been constructed, they will be used to cover peak loads. The cost of such boiler houses together with the heating systems is about 107 000 roubles per Mkcal/hr of thermal output, or about 20 roubles per square metre of living space; and the cost of heat produced is about 25 roubles per Mkcal/hr, which is considerably less than with any other sort of heat.

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SOV/96-59-7-9/DS

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supply. The All-Union Thermo-Technical Institute has developed the design for such a peak water-heating boiler installation and together with the Moscow Planning Institute has compared the economics of a number of different methods of heat supply. A detailed description of the boiler house is then given, and the general arrangement is illustrated in Figure 1. It will contain three water-heating boilers type PTV-100, each with a thermal output of 100 Mkal/hr, a furnace volume of 246 m³, a radiation heating surface of 396.7 m², a convective heating surface of 2 280 m², and a mean efficiency of 93.8%. The thermal output of the boiler house suffices for a typical district with a total housing area of 1565 000 m². For smaller sites two boilers type PTV-100, or two or three similar boilers type PTV-50, may be used. The boiler house is designed to burn natural gas and will thus meet the requirements of Moscow, Kiyev, Leningrad, Kharkov, Rostov-na-Donu, L'vov and a number of other towns. Stand-by fuel-oil-burning equipment is provided, increasing the cost of the boiler house by about 20%. As gas fail-

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SOV/96-59-7-3/26

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ures are not likely to last more than a few hours, this equipment may prove unnecessary. As will be seen from the arrangement diagram given in Figure 2, the station has water-treatment equipment and system pumps for use until the district-heating station is constructed. Later on, when the boiler house is only covering peak loads, these accessories may be removed; alternatively, the corresponding equipment in the associated district-heating stations may be smaller. De-aerators are installed. The water-treatment plant is of the sodium-cationite type, and stores are provided for the necessary chemicals. The gas and fuel-oil supply arrangements are briefly described. Boilers type PTV-100 operate on natural draught and each burner has its own draught fan. The common steel smoke-stack is erected on the middle boiler. A central control panel is provided. When fuel-oil is burned special measures are taken to prevent contamination of the convective surfaces. Arrangements are made to deliver caustic magnesite or lime to the

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SOV/06-09-7-9/26

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upper part of the furnace in order to make the deposits friable. If the water returned from the district-heating system is below the dew point of the furnace gases, it is heated by circulation of hot water. Provision is also made to wash the convective surfaces of the boiler with hot water, to remove deposits. A thermal load curve for Moscow, given in Figure 4, shows that the boiler house will operate for only 25 - 30 hours per year with the full thermal load of 300 Mkeal/hr, and that the load would be above 80% for not more than 400 hours per year. During the summer the load would not exceed 60% of the capacity of one boiler and so this period can safely be used for general overhaul. When the boiler house is covering only peak loads, its output will still further be reduced, even if new consumers are connected in the meantime. When this occurs it will be possible to use only two boilers, keeping the third in reserve. It has been calculated that the boilers will be hydro-dynamically stable with a water-flow rate differing from the rated value by 20%. In the early

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stages, before all the housing is constructed, still lower flow-rates may be required and it will then be necessary to re-circulate water through the boilers. A high degree of automation will be used and so it is expected that the boiler house will be operated by shifts of three men each. The total cost of construction of the boiler house is about 6 400 000 roubles, of which the fuel-oil handling installation costs 1 073 000 roubles. The main performance and cost data are tabulated for the new boiler house and for the old type KG-10, which is much more expensive. It is concluded that large peak boiler houses with water-heating boilers types PTV-100 or PTV-50 have considerable advantages over smaller boiler houses, including those with boiler type KH-10, in respect of both capital and running costs. Therefore, only boiler houses of this kind should be constructed in districts with extensive new housing construction.

There are 4 figures, 1 table and 1 Soviet reference.

ASSOCIATION: Vsesoyuznyy teplotekhnicheskiy institut (All-Union
Card 6/6 Thermo-Technical Institute)

ZHIRNOV, N.I., kand.tekhn.nauk; KROL', L.B., kand.tekhn.nauk; LIVSHITS,
E.M., inzh.; RAEKIN, Yu.I., inzh.

Peak-load boilers used in district heating systems. Energetik
8 no.6:28-34 Je '60. (MIRA 13:7)
(Boilers)

KROL', L.B., kand.tekhn.nauk; KEMEL'MAN, G.N., inzh.; KORETSKIY, A.S., inzh.

Study of the temperature control of superheated steam with recirculation of gases. Teploenergetika 8 no.5:39-45 My '61.
(MIRA 14:8)

1. Vsesoyuznyy teplotekhnicheskiy institut.
(Boilers)

KROL', Lazar' Borisovich; KOMAROV, L.P., red.; LARIONOV, G.Ye.,
tekhn. red.

[Principal features of high-pressure and super-high pressure
boiler units] Osnovnye osobennosti kotel'nykh agregatov vysoko-
kogo i sverkhkriticheskogo davleniya. Moskva, Gosenergoizdat,
1962. 239 p. (MIRA 15:12)

(Boilers)

KEMEL'MAN, G.N., inzh.; KROL', L.B., kand.tekhn.nauk

Study of means for the regulation of secondary steam superheating
in a 200 Mw. block. Elek. sta. 33 no.10:8-16 D '62. (MIRA 16:1)
(Electric power plants)

4. 27

KROL, L.B.

Concerning the delivery of magnesite into boiler furnaces.
Energetik 9 no. 2:36-37 F '61. (MIRA 16:7)

(Magnesite) (Boilers)

KROL', L.B., doktor tekhn. nauk; KEMEL'MAN, G.N., inzh.; MEN'KOV, N.N., inzh.

Experimental study of a component of a steam-to steam
intermediate superheater. Teploenergetika 11 no.5:11-18
My'64. (MIRA 17:5)

1. Vsesoyuznyy teplotekhnicheskiy institut.

KROL', L.B., doktor tekhn. nauk; KEMEL'MAN, G.N., inzh.; MEN'KOV, N.N.,
inzh.; PAYMUKHIN, V.B., inzh.

Experimental study of intermediate superheating control using steam-
to-steam heat exchangers. Teploenergetika 12 no.4:18-24 Ap '65.

l. Vsesoyuznyy teplotekhnicheskiy institut i Zainskaya gosudarstvennaya
rayonnaya elektrostantsiya. (MIRA 19:5)

Khod'ya, T.P., 1965, 1965, 1965

Topics in the development of thermal power engineering in the
United States and Western Europe. Teploenergetika 12 no.7:73-
75 (1965) (MIR 12:7)

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The oxidation refining of antimony. G. A. Messen, L. V. Kral and O. R. Kreis. *J. Applied Chem. (U.S.S.R.)* 13, 325 (in French, 328) (1940). The admixts of As and Fe can be removed from Sb by blowing air through the molten metal in the presence of soda slag under the following optimal conditions: temp. with velocity of air passing through molten metal 500°C, 1 mm per kg. of metal, two charges of slag each amounting to 20% of soda and duration 1 hr. per charge of slag (total 2 hrs.). The yield of refined Sb was 90.8% of 90.8% purity; 0.75% of Sb was absorbed in slag and 1.75% was evapd. as Na_2Sb . The presence of soda was necessary for a more complete removal of Fe and especially of As.

G. A. Volgour

AMERICAN METALLURGICAL LITERATURE CLASSIFICATION

S/180/60/000/01/005/027
E071/E135

AUTHORS: Vigdorovich, V.N., Ivleva, V.S. and Krol', L.Ya.
(Moscow)

TITLE: On the Purification of Antimony by the Method of Zonal
Recrystallization

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Metallurgiya i toplivo, 1960, Nr 1, pp 44-49 (USSR)

ABSTRACT: The results are given of an evaluation and classification
of admixtures present in antimony from the point of view
of the nature of their interaction with antimony.
Furthermore, the results are reported of qualitative and
quantitative analyses of the admixtures present in the
starting and purified product. On the basis of analysis
of available equilibrium diagrams characterising the
interaction of antimony with corresponding admixtures,
the latter were classified according to the ease with
which they can be removed by zonal recrystallization.
Admixtures of elements, the solubility of which in
antimony in the solid state is low, are classified as
easily removable. Admixtures of elements which are
better soluble in solid antimony are considered as being

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On the Purification of Antimony by the Method of Zonal Recrystallization

difficult to remove and classified according to their partition coefficients (Fig 2). The behaviour of admixtures in antimony during zonal recrystallization was experimentally tested at various speeds of the melting zone: 4, 2 and 1 mm/min during 3, 5, 8, 10, 15 and 20 passes. The width of the melting zone was 2 to 3 cm, the length of ingots 300 mm. The ingots were kept in graphite boats in an atmosphere of argon. The contents of As, Fe, Si, S and P were determined chemically; of other elements spectroscopically. A specially developed method combining chemical enrichment followed by spectroscopic analysis (no details given) was used for the determination of Pb, Cu, Ni, Co, In, Al and Cd. The method of radioactive analysis was used for Ni, Co, Tl, As (the method was developed by A.I. Kulak, Ref. 13) and Mn, Se, Cu, Zn, Ga, As, P and Cr (the method was developed by E.Ye. Rakovskiy and Yu.V. Yakovlev). Flame photometry was used for the determination of Na, K and Ca. The method of radioactive isotopes was used for iron due to the fact that some of

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the reagents used in the analyses were contaminated by this element. The data on the conditions of the starting antimony and the purified product are given in Table 1 and Fig 3. The most objective method of determining the purity of the metal is by measuring its residual electrical resistance at temperatures of liquid helium and hydrogen. The experimental results are shown in Table 2. These confirmed that a high purity antimony was obtained.

There are 3 figures, 2 tables and 13 references, of which 7 are Soviet, 5 English and 1 German.

ASSOCIATION: Institut tsvetnykh metallov
(Institute of Non-Ferrous Metals)
Gosudarstvennyy nauchno-issledovatel'skiy i
proyektnyy institut redkometallicheskoy
promyshlennosti (Giredmet)
(State Scientific Research and Design Institute of the
Rare Metals Industry (Giredmet))

SUBMITTED: July 5, 1959

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B019/B056

9.4174

AUTHORS:

Krol', L. Ya., Candidate of Technical Sciences, Nadzhip, F. E.
Engineer, Nashel'skiy, A. Ya., Candidate of Technical
Sciences, Starkov, A. I., Engineer

TITLE:

Thermocouples Made From Intermetallic ZnSb and CdSb
Compounds

PERIODICAL:

Priborostroyeniye, 1960, No. 8, pp. 28-29

TEXT: The work discussed was performed at the Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti "Gidredmet" (State Scientific Research and Planning Institute of the Rare-earth Metal Industry "Gidredmet"). By way of introduction, the authors mention several fields of application of semiconductor thermocouples, and discuss a formula for the electric energy generated by thermocouples. The good physical properties of zinc- and cadmium-antimonide for the use as thermocouples may be seen from Table 1. The characteristics of thermocouples made from compounds of this kind are given in Table 2, which were suggested by the institut poluprovodnikov

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S/180/61/000/002/004/012
E071/E435

AUTHORS: Vigdorovich, V.N., Ivleva, V.S. and Krol', L.Ya. (Moscow)

TITLE: On the Interaction of Admixtures During Zonal Recrystallization of Antimony

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1961, No.2, pp.72-76

TEXT: The problem of interaction of admixtures during purification of materials by recrystallization methods has been little studied. Therefore, the authors investigated the interaction of admixtures in the range of concentrations of 10^{-2} to 10^{-5} wt.% during zonal recrystallization of antimony. Two kinds of antimony, non-purified and purified by zonal recrystallization, were used for the experiment. Into the purified antimony additions of tin and bismuth, in the form of 4 to 5% alloys, were made. Samples were analysed for admixtures of copper, silver, nickel, iron, lead, tin, bismuth and arsenic by the spectroscopic method. The experiments were carried out in boats from purified graphite 300 mm long. The length of the

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molten zone was about 30 mm. The process of zonal recrystallization was carried out in an argon atmosphere at a velocity of 2 mm/min. The distribution of admixtures of tin and bismuth was studied after 10 and 20 passes. The initial content (wt.%) of admixtures is given in table 1 and the distribution of tin and bismuth along the length of the ingots (about 300 g) after zonal recrystallization is plotted in the figure. Although ingots with identical contents of tin and bismuth were not obtained (due to difficulties in precise alloying) yet the relative positions of the distribution curves indicate that the purification of ingot 1 containing about 0.2% of admixtures was more difficult than that of ingots 2 and 3 containing less admixtures (about 0.005%). Effective coefficients K of the distribution of tin and bismuth were calculated (Table 2). The calculation was done on the basis of analytical results obtained for the part of the ingot situated about 30 mm from the starting end (ℓ about 10% of the total length of the ingots). This part of the ingots was not affected by the dirty ends. After 10 passes there was no substantial difference in the effective distribution coefficients for tin in pure and contaminated

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antimony, however, the difference appeared after 20 passes. In the case of bismuth, the difference in the effective distribution coefficients in pure and contaminated antimony was established after 10 passes; after 20 passes the removal of bismuth from the pure ingot was so effective that its content was beyond the sensitivity of the analytical method used ($6 \times 10^{-5}\%$), therefore the distribution coefficient was only roughly evaluated. It was established in a previous experimental work (Ref.6) on the purification of antimony from admixtures that lead, tin, bismuths and arsenic represent a group of admixtures which are the most difficult to remove. The results obtained in the present work confirmed this conclusion but they also indicated that the removal of tin and particularly bismuth is more difficult in the presence of other admixtures. In the discussion of results the following alternative explanations of the above phenomenon are offered:
a) Assuming a statistically uniform distribution of admixtures, the mean distance between atoms of admixtures in the impure metal would be about 3 to 4 and in the pure metal 300 to 350 Å. Thus in the first case the distances between atoms of the main admixture (Sn or Bi) are similar or larger than distances between

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atoms of other admixtures. They are also similar to the distances of inter-atomic interaction. Apparently such a ratio of concentrations is beneficial (at least from kinetic considerations) for the appearance of interaction between the main and other admixtures. In the second case the mean distance between atoms of the main admixture is many times smaller than mean distances between other admixtures. Such a ratio of concentrations has less influence on the behaviour of the main admixture during zonal recrystallization. However, it is pointed out that changes of conditions of interaction of admixtures in the diffusion layer are difficult to evaluate. It is possible that during zonal recrystallization an accumulation of admixtures at the crystallization front takes place, whereupon the interaction between the main and other admixtures in this layer may appear earlier than it would be expected on the assumption of their uniform distribution.

b) The experimental data can also be explained on the basis of ideas on the peculiar conditions of crystallization acting in the immediate neighbourhood of the solidification front (Ref.8: Chalmers, B., J.Metals, 1954, v.6, S.1, No.5, pp.519-533).

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It is possible that in the case of crystallization of impure antimony the conditions are more favourable for a more pronounced influence of concentration supercooling and, consequently, conditions for diffusionless crystallization acts are formed, causing irregularities in the solidification front and enclosures of the melt. This should lead to a deterioration in the effect of recrystallization separation, i.e. to values of the effective distribution coefficient closer to unity. B.A.Kolachev is mentioned for his contribution in this field. There are 1 figure, 3 tables and 8 references: 5 Soviet and 3 non-Soviet.

ASSOCIATION: Institut tsvetnykh metallov im. Kalinina "Giredmet"
(Institute of Non-Ferrous Metals imeni Kalinin,
"Giredmet")

SUBMITTED: June 24, 1960

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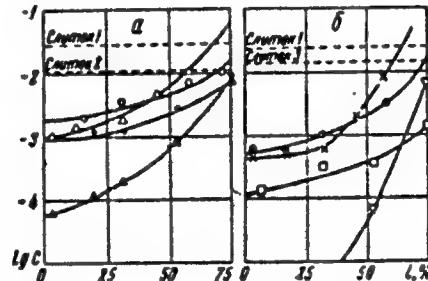
Figure. The distribution of admixtures Sn (Fig.a) and Bi (Fig.b) during zonal recrystallization of antimony.

Fig.a - after 10 passes (o - for ingot 1, * - for ingot 2)
after 20 passes (Δ - for ingot 1, \blacktriangle - for ingot 2)

Fig.b - after 10 passes (o - for ingot 1, \square - for ingot 3)
after 20 passes (x - for ingot 1, \triangledown - for ingot 3)

broken lines indicate the
corresponding levels of the
starting concentrations of
Sn and Bi in ingots.

СЛУТOK - ingot



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Table 1. Content of admixtures in ingots of antimony used for zonal recrystallization

1 - ingot No.

2 - Wt.% of admixtures

Таблица I

Содержание примесей в слитках сурьмы, предназначенных для зонной перекристаллизации

Слиток	Содержание, вес. %							
	Cu	Ag	Ni	Fe	Pb	Sn	Bi	As
1	3.2·10 ⁻³	3.4·10 ⁻³	2.3·10 ⁻³	7·10 ⁻⁴	3·10 ⁻³	2.7·10 ⁻³	2.4·10 ⁻³	1.3·10 ⁻³
2	9.0·10 ⁻⁴	3.0·10 ⁻³	1.7·10 ⁻³	6·10 ⁻⁴	1·10 ⁻³	1.1·10 ⁻³	7.0·10 ⁻⁵	5.0·10 ⁻⁴
3	8.0·10 ⁻⁴	4.0·10 ⁻³	1.6·10 ⁻³	6·10 ⁻⁴	8·10 ⁻⁴	2.0·10 ⁻⁴	1.4·10 ⁻³	5.0·10 ⁻⁴

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Table 2. Effective coefficients of distribution K of admixtures during zonal recrystallization of antimony (for each admixture: top value - after 10 passes, bottom value - after 20 passes)

Таблица 2

Эффективные коэффициенты распределения K примесей при зонной перекристаллизации сурьмы*

- 1 - admixtures
- 2 - K in ingots
- 3 - change in K, %

Примесь	K в слитках			Изменение K, %
	1	2	3	
Sn	0.60 0.70	0.59 0.60	— —	1.7 16.7
Bi	0.50 0.65	— —	0.43 ~0.40	16.3 02.5

* Для каждой примеси верхняя строка примеси — при 10 проходах зоны, нижняя — при 20.

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S/180/61/000/004/002/020
E073/E535

AUTHORS: Vigdorovich, V.N., Ivleva, V.S. and Krol', L.Ya.
(Moscow)

TITLE: Distribution of admixtures of arsenic and selenium in
the zone refining of antimony

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Metallurgiya i toplivo, 1961, No.4, pp.29-30

TEXT: In an earlier paper (Ref.1: Izv.AN SSSR, OTN,
Metallurgiya i toplivo, 1960, No.1) the authors studied the
behaviour of numerous admixtures in zone refining of antimony. In
this paper further information is given on the behaviour of arsenic
and selenium and the influence of initial concentration on the
effectiveness of eliminating these elements during refining is
studied. The initial material contained the following admixtures
(%): Cu, Pb, Ni - 10^{-3} to 10^{-4} , Ag - 10^{-4} to 10^{-5} , Sn - 10^{-4} ,
Fe $\sim 10^{-3}$, Bi - 10^{-5} , Zn, In, Ga, Al $< 10^{-4}$, B $< 3 \cdot 10^{-5}$. Arsenic
was introduced in the form of a 2% alloy. The ingots were 150 mm
long and the length of the molten zone was 15 mm. After zone
refining (10 passes at a speed of 2 mm/min), the ingot was cut X

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longitudinally into four equal parts which were then crushed in a porcelain mortar, the powder was mixed and chemically analysed for arsenic content. The selenium was introduced in the form of the isotope Se^{75} . The experiments were carried out on ingots 280-300 mm long, with a molten zone of about 30 mm (10 passes at a speed of 2 mm/min). The obtained results are plotted in Figs.1 and 2, which give the logarithm of the concentration ($\lg C$) of the admixed arsenic (Fig.1) and selenium (Fig.2) along the length of the antimony ingot ℓ ; the dashed lines indicate the initial concentrations which, in %, amounted to: 1 - $6 \cdot 10^{-1}$, 2 - $8 \cdot 10^{-2}$, 3 - $9 \cdot 10^{-3}$ (Fig.1) and 1 - $2.5 \cdot 10^{-3}$, 2 - $7.5 \cdot 10^{-4}$, 3 - $4.5 \cdot 10^{-4}$ (Fig.2). The effective distribution coefficients were determined by an approximate graphical method and the obtained results were as follows:
a) for arsenic: concentration $6 \cdot 10^{-1}\%$ - 0.82, $8 \cdot 10^{-2}\%$ - 0.78 and $9 \cdot 10^{-3}\%$ - 0.82; b) for selenium: concentration $2.5 \cdot 10^{-3}\%$ - 0.57, $7.5 \cdot 10^{-4}\%$ - 0.52, $4.5 \cdot 10^{-4}\%$ - 0.59. The distribution coefficient of arsenic ($K = 0.8 \pm 0.1$) is unfavourable from the point of view of purifying antimony; the value calculated from the phase diagram

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is $K_e = 0.64$. The phase diagram of selenium and antimony is of the monotectic type and has a more favourable effective distribution coefficient ($K_e = 0.55 \pm 0.10$) from the point of view of zone refining. Within the concentration range of 10^{-1} to $10^{-4}\%$ both admixtures have a constant distribution coefficient as far as could be judged from the sensitivity of the methods used. There are 2 figures and 6 references: 3 Soviet and 3 non-Soviet. The two English-language references read as follows: Ref. 4: Thurmond, C.D., Struthers, J.D. J.Phys.Chem., 1953, v.57, p.831; Hansen, M., Anderko, K. Constitution of binary alloys. N.Y.-Toronto-London, 1958.

SUBMITTED: December 5, 1960

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88718

9.4300 (104²¹⁸3,1150)

S/032/61/027/002/009/026
B134/B206

AUTHORS: Krol', L. Ya., Nashel'skiy, A. Ya., and Khlystovskaya, M. D.

TITLE: Method for the graphite coating of quartz workpieces

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 2, 1961, 177-178

TEXT: To prevent a reaction between quartz and semiconductor materials, the surface of the former is coated with a thin carbon layer. No exact data on applying such coats are to be found in relevant publications. In this paper, a method is described for applying carbon coatings on quartz surfaces, which is based on a pyrolysis of pure organic compounds (such as acetone). The thermal decomposition of acetone proceeds most favorably at 700°C, CO₂, CH₄, hydrogen, and ethylene being formed. The latter dissociates and contains the complex anion (C=C)²⁻, which easily polymerizes to the graphite lattice. Since the separated carbon is in an active state, it adsorbs well on the quartz surface. Heating the graphitized quartz piece in vacuum apparently strengthens the quartz-carbon bond through formation of silicon carbide, which was also determined microscopically.

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Method for the graphite coating...

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B134/B206

Graphitizing takes place in a special apparatus which consists, in principle, of a heatable quartz tube through which argon is conducted serving as a carrier gas for the acetone vapor. Best results were obtained at 700°C and a duration of 30 min. The graphitized object is ignited in vacuum (0.05 mm Hg) at 1100-1200°C for 2-3 hr.. There are 2 figures, 1 table, and 3 non-Soviet-bloc references.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti (State Scientific Research and Planning Institute of the Rare Metal Industry)

Card 2/2

GITERMAN, M.Sh.; KROL', L.Ya.; MEDVEDEV, V.A.; ORLOVA, M.P.; PADO, G.S.

Conductance in the impurity zone in n-GaAs. Fiz, tver, tela
4 no.5:1383-1385 My '62. (MIRA 15:5)

1. Institut fiziko-tehnicheskikh i radiotekhnicheskikh
izmereniy, Moskva.
(Gallium arsenide--Electric properties)

ALL INCL AP7009520

SOURCE CODE: UR/0363/67/003/002/0275/0279

AUTHOR: Krol', L. Ya; Ponomarev, N. M.; Rakov, V. V.; Yeremoyev, V. V.

ORG: Gircdmet

TITLE: Determination of the diffusion coefficients of arsenic vapor in argon and helium

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 3, no. 2, 1967, 275-279

TOPIC TAGS: arsenic, gas diffusion, argon, helium

ABSTRACT: The diffusion coefficients of arsenic vapor in argon and helium were determined in the 1.8-5.5 abs. atm. range by Stefan's stationary method. Based on experimental data, the diffusion coefficients reduced to standard conditions were calculated to be: in Ar, $D_{0,As4} = (0.122 \pm 0.006) \text{ cm}^2/\text{sec}$, and in He, $D_{0,As4} = (0.174 \pm 0.009) \text{ cm}^2/\text{sec}$. The absolute experimental error did not exceed 5%. In the investigated range of temperatures and pressures, the diffusion coefficients of arsenic vapor were inversely proportional to the total pressure of the mixture at constant temperature; this behavior confirms Loschmidt's law. It is shown that a good approximation of the temperature dependence of the diffusion coefficient at constant pressure is the Maxwellian model of intermolecular interaction, which expresses the parabolicity of this dependence. Orig. art. has: 2 figures, 1 table and 3 formulas.

SUB CODE: 07/ SUBM DATE: 28Dec65/ ORIG REF: 002

Cord 1/1

UDC: 533.15:546.19

KROL, L.Ye.

Dulling of bits in compressed air impact hole drilling and ways of increasing their strength. Izv. vys. ucheb. zav.; tsvet. met. 8 no.4:15-21 '65. (MIRA 18:9)

1. Kafedra spetsial'nykh kursov gornogo dela Severokavkazskogo gornometallurgicheskogo instituta.

KROL, M.; SASIADA, E.

The complete direct sums of torsion-free Abelian groups of rank 1
which are separable. Bul Ac Pol mat 8 no.1:1-2 '60. (EEAI 9:11)

1. Department of Mathematics, Nicholas Copernicus University,
Torun and Institute of Mathematics, Polish Academy of Sciences.
Presented by K.Kuratowski.
(Abelian groups)

KROL, M.

Separable groups. Pt. 1. Bul Ac Pol mat 9 no.5:337-344 '61.

1. Nicholas Copernicus University, Torun. Presented by
A. Mostowski.

KOZLOWSKI, Piotr; KROL, Michal

Lischku's joints. Polski presegl.radiol. 23 no.5:268-275
8-0 '59.

1. Z Pracowni Radiologicznej Centralnego Szpitala MOW
Kierownik: dr med. A. Kacurba.
(SPINE die)

EROL, H. A.

"A Problem in the Reduction of Production Cost in the Building Trade." p. 228, Warszawa,
Vol. 25, no. 7, July 1953.

SO: East European Accessions List, Vol. 3, No. 9, September 1954, Lib. of Congress

KROL', M.F., Prof.

KROL', M. F., Prof.

Zaveduyushchiy kafedry psichiatrii Voronezhskogo meditsinskogo instituta

Zhur. nevr. i psikh., 52,7, iyul', 1952.

KROL', M.I.

Yakovlev, G.N. and Krol', M.I. "New construction methods for high-capacity
ferroconcrete reservoirs," *Stroit. prom-st'*, 1948, No. 12, p. 2 -5

SO: U-2888, *Letopis Zhurnal'nykh Statey*, No. 1, 1949

1949, No. 1.

Yakovlev, G. I. and Kroll', N. I. - "Results of mechanization of concrete work",
Gor. Khos-vo Moskvy, 1949, No. 1, p. 22-24.

SO: U-3242, 11 March '3, (Letopis 'Zhurnal 'nykh Statley, No. 3, 1949).

L 2937-66 EIT(m)/EIT(c)/EIP(j)/I/EIL(m) m/10

ACCESSION NR: AP5024395

UR/0286/65/000/015/0079/0080

AUTHOR: Brodskiy, G. Sh.; Krol', M. L. S.; Krupkina, F. A.; Serapegina, O. A.

TITLE: Preparation of porous material. Class 39, No. 173401/5

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 79-80

TOPIC TAGS: foam plastic, resin, polyethylene, phenolformaldehyde

ABSTRACT: An Author Certificate has been issued for a preparative method for a water- and heat-resistant foamed plastic based on a formulation involving a phenol-formaldehyde resin (nonmodified or modified by furfural-acetone resin) and polyethylene. 15, 44,55 [B0]

ASSOCIATION: Nauchno-issledovatel'skiy institut plastmass (Scientific Research Institute of Plastics)

SUBMITTED: 14Aug63

ENCL: 00

SUB CODE: MT

NO REC SOV: 000

OTHER: 000

ATD PRESS: 4108

PC
Card 1/1

KROL', M.N., vrach

Changes in the fundus oculi in late toxicoses of pregnancy. Oft.
zhur. 15 no.1:38-42 '60. (MIRA 13:5)

1. Iz kliniki glansykh bolezney (zav. - prof. I.F. Kopp) Stalinskogo
meditsinskogo instituta.
(RETINA--BLOOD SUPPLY) (PREGNANCY, COMPLICATIONS OF)

KROL', M. N., ordinator

Acute ischemia of the retina in pregnancy. Oft. zhur. no.2:
(MIRA 15:4)
78-81 '62.

1. Iz glaznogo otdeleniya oblastnoy klinicheskoy bol'nitsy im.
M. I. Kalinina, g. Donetsk.

(PREGNANCY, COMPLICATIONS) (RETINA--BLOOD SUPPLY)

KROL', M.N.

Late outcomes of late pregnancy toxemias with changes in the fundus
oculi. Sov.med. 26 no.8:132-136 Ag '62. (MIRA 15:10)

1. Iz glaznogo otdeleliya (zav. - prof. L.B.Zats) Donetskoy
oblastnoy klinicheskoy bol'nitsy imeni M.I.Kalinina (glavnnyy vrach
V.F.Zubko).

(EYE--DISEASES AND DEFECTS)
(PREGNANCY, COMPLICATIONS OF)
(TOXEMIA)

FRYEDIN, A.S.; SHOLOKHOVA, A.B.; KROL', M.S.; BEL'FER, S.I.

Use of synthetic adhesives based on phenol-formaldehyde resins in
bonding asbestos cement. Plast.massy no.6:42-46 '60.

(MIRA 13:11)

(Asbestos cement) (Adhesives)
(Phenol condensation products)

12200 2208 2608 Only

26993

S/191/61/000/009/003/007
B110/B218

151124

AUTHORS: Freydin, A. S., Sholokhova, A. B., Krol', M. S.

TITLE: Applicability of accelerators in gluing asbestos cement and aluminum with phenol glues

PERIODICAL: Plasticheskiye massy, no. 9, 1961, 20 - 24

TEXT: The reduction of hardening temperatures of phenol resins by means of accelerators is important for gluing asbestos cement since it is subject to cracking at high temperatures. The authors suggested alcoholates, glycerates, phenolates of Ca and Zn, as well as MnO_2 , PbO_2 , $(NH_4)S_2O_8$, $KMnO_4$, $PbCrO_4$, $ZnCrO_4$, Na_2CrO_4 , $Na_2Cr_2O_7$ as accelerators. They studied the use of various accelerators for gluing asbestos cement with aluminum alloys by means of phenol glues. They tested: (a) alkalis: KOH, NaOH, $Ca(OH)_2$, $MgO-MgCl_2$ mixture, borax; (b) resorcinol, resorcinol-formaldehyde resin 0Р-12(FR-12); (c) diphenol ketone resins on schistous raw material basis: $\Delta\Phi K-1A$ (DFK-1A); $\Delta\Phi K-7\Pi$ (DFK-7P); (d) weak acids: phenyl urethanyl sulfochloride (PUSC), oxymethyl phosphinic acid (OMPA), its Na monosalt, .

X

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Applicability of accelerators...

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B110/B218

boric acid; (e) various fillers: potentially active fillers: vibration-crushed coke, sulfocarbon, Fe powder, gypsum. They used as glues: (1) phenol formaldehyde resin "Б"("B") with 10 parts by weight of wood dust; (2) ЦНИИМОД-1(TaNIIMOD-1) resin and bakelite varnish. Asbestos sheets 8-9mm thick containing 7-12% H_2O were glued together for cleaving tests, and AMg-AT(Mg-Al) aluminum 2 mm thick for shear tests. The hardening rate was examined at 110-112°C. The hardening temperature of 150°C corresponded to a temperature of the joint in asbestos cement of 120-125°C, in aluminum of 150°C. The specimens were tested for durability of the gluing on test machines of the type Amsler or Shopper in dry state, as well as after 24 hr moistening with H_2O and acetone. PUSC, OMPA, and mono-Na-CMPA destroy the asbestos cement surface during resin hardening. Fillers do not accelerate hardening. The fillers gypsum and MgO-MgCl₂ mixture, which react with the methyol groups of resin, bind the cement and reduce adhesion. Ca(OH)₂, KMnO₄, resorcinol-formaldehyde resin FR-12, and the diphenyl ketone resins DFK-1A and DFK-7P were found to be suited best. Among them, KMnO₄ and

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Applicability of accelerators...

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FR-12 (with 13% paraformaldehyde) were most efficient. 10-20% of alkali considerably accelerates hardening, but reduces the water resistance strongly. An addition of $\leq 10\%$ Ca(OH)_2 does not affect the water resistance, Ca(OH)_2 $\geq 3\text{-}5\%$ increases the viscosity and reduces the service life of the glue. With 5% Ca(OH)_2 , hardening takes 13 min. The cleaving strength of asbestos cement is 26 kg/cm^2 in dry state, 30 kg/cm^2 after 24 hr moistening. Optimum results were obtained by FR-12 with KMnO_4 . Similar results were obtained with other resorcinol resins such as ДМ-12(DM-12) synthesized at the NIIPM, and ДФК-1A (DFK-1A) produced by A. Ya. Aarna, K. R. Kiysler (Ref. 10: Goryuchiye slantsy, Byull. nauchno - tekhn. inform. (Tallin), No. 1, 37 (1961)) at the Tallinskiy politekhnicheskiy institut (Tallin Polytechnic Institute); DFK-1A proved to be optimum. The glues are highly water-resistant. Open storage for ≤ 48 hr at $18\text{-}20^\circ\text{C}$ after application improves the quality of the FR-12 + KMnO_4 gluing. Accelerators are inefficient with TsNIIMOD resin and bakelite varnish. For Al gluings, the "B" resin is modified to the quick-hardening ФЭ-10(FE-10) glue by means of epoxy resin ЭД-5(ED-5) or ЭД-6(ED-6) . Good acceleration (from 8 to 1.5 min) was attained with 10% addition of diphenyl ketone resin ДФК-7П(DFK-7P) to FE-10. 20% of 40% formalin and 1% Card 3/6

Applicability of accelerators...

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B110/B218

concentrated soda lye should be added at the same time. The stable ϕP_3 -10 (FRE-10) glue contains: phenol formaldehyde resin B, diphenyl ketone resin DFK-7P, epoxy resin ED-5 or ED-6, 40% formalin, and wood dust, and it is fully water-resistant like $\phi P(FR)$ (glue B and resin DFK-1A). Destruction always occurs in the asbestos cement, not in the glued joint. Three months' heating at 80-100°C does not reduce the strength which speaks in favor of the stability of the resulting polymer systems. Protraction of the optimum hardening time (1.5-2.5 min) to 5 min reduces strength. The authors assume that the hardening of modified phenol glues ϕP -2(BF-2), BK-32-200(VK-32-200), etc. is also accelerated by resins of the DFK type. Experiments concerning the effect of acceleration on aging yielded constant strength after 40 and 80 cycles. There are 3 figures, 3 tables, and 10 references: 4 Soviet and 6 non-Soviet. The three most important references to English-language publications read as follows: Ref. 3: US Patent 1693461; Ref. 5: Adhesive and resins, 5, 70 (1956); Ref. 8: US Patent 2855382.

Card 4/6

KROL', M.Ye.; IVANOVA, N.M.; KACHAUNOVA, N.N.

Use of fluorescence microscopy for the laboratory diagnosis of
tuberculosis. Probl.tub. 37 no.7:84-89 '59. (MIRA 13:4)

1. Iz otdela mikrobiologii (zaveduyushchiy - kand.med.nauk V.I.
Endryavtseva) Leningradskogo instituta tuberkuleza (direktor -
prof. A.D. Semenov).
(TUBERCULOSIS diagnosis)

KROL, N. G.

USSR/Medicine - Neurophysiology

Card 1/1

17, 9/19

FD-2807

Author

: Krol', N. G. and Zhelobova, Z. A.

Title

: Physiological symptoms of the functional condition of the motor apparatus in hyperkinesis. Part 2: Muscle tone in athetosis

Periodical

: Byul. eksp. biol. i med. 6, 36-39, June 1955

Abstract

: During lengthy myotonometric investigations of the rigidity of muscles of patients with signs of athetosis, authors observed considerable variations. In studying antagonist muscles of the upper and lower extremities they found that the muscle tone was within normal limits in 29% of the cases during maximal prostration, in 18% it was below normal and in 53% above normal. Sharp variations in muscle tone during athetosis are characteristic. Authors' investigations led them to conclude that in patients of athetosis in maximal weakened conditions of the muscles there is a disturbance of the relationship between the indices of tone of the muscle-antagonists as well as of the muscles of distal and proximal groups. No references; graphs, table.

Institution

: Laboratory of Clinical Physiology, Sverdlovsk Scientific Research Institute of Restorative Surgery, Traumatology, and Orthopedics, (Dir: Corresponding Member Academy Medical Sciences USSR Prof. F. R. Bogdanov)

Submitted

: 10 June 1954

Book/Medicine/Neurophysiology

Card 1/1

Pub. 17-7/23

FD-2943

Author

: Krol', N. G. and Zhelobcva, Z. A.

Title

: Physiological indicators of the functional condition of the motor apparatus during hyperkineses. (Characteristics of subordinate changes of motor chronaxy in athetosis.)

Periodical

: Byul. Eksp. biol. i med. 7, 24-27, Jul 1955

Abstract

: Authors believe that changes in the regulating activity of the central nervous system undoubtedly affect irritation and lability of the neuro-muscular system and consequently change its chronaxy (called subordination). They compiled tables from chronaximetric data from patients with athetoses of arm and leg muscles and of the coordination between chronaxy of distal and proximal muscles of the extremities and muscle-antagonists. They conclude that in athetosis the regulating role of the cortical zone of the motor analyzor is interrupted, that the complex picture is subject to a mechanism which is not simple to explain; that it is affected by functional changes in the cortical zone of the motor analyzor as well as by the activity of the subcortical region. 5 references, 5 USSR, 5 since 1940, tables.

Institution

: Laboratory of Clinical Physiology, Sverdlovsk Scientific-Research Institute of Restorative Surgery, Traumatology, and Orthopedics. (Dir: Corresponding Member Academy of Medical Sciences USSR, Prof F. R. Bogdanov)

Submitted

: 10 June 1954

Н.Г. КРОЛ
KROL', N.G.; ZHELOBOVA, Z.A.

Analysis of changes in motor chronaxia in athetosis. Zhur.nevr. i
psikh. Supplement:23 '57. (MIRA 11:1)

1. Laboratoriya klinicheskoy fiziologii Sverdlovskogo nauchno-
issledovatel'skogo instituta vosstanovitel'noy khirurgii, travmato-
logii i ortopedii (dir. F.R.Bogdanov)
(CHRONAXIA) (ATHETOSIS)

Борис А. (

KROL', N.G.; SHMINKE, O.A.

Differential thermometry as a method of objective registration of the intensity of hyperkinesia [with summary in French]. Zhur.nevr.i.psich. 57 no.12:1467-1471 '57. (MIRA 11:2)

1. Iz laboratorii klinicheskoy fiziologii Sverdlovskogo nauchno-issledovatel'skogo instituta vonstanovitel'noy khirurgii, travmatologii i ortopedii (dir. - prof. F.R.Bogdanov)

(BODY TEMPERATURE, in various diseases,
differential thermometry in determ. of intensity of
hyperkinesia (Rus))

(MOVEMENT DISORDERS, physiology,
sense)

KROL', N.G., dotsent, ZAYKOVA, N.V., nauchnyy sotrudnik

Physiological investigation of the "old" and "new" functions
of a salivary gland following transplantation of Stensen's duct
to the conjunctival sac in xerophthalmia. Oft.zhur. 13 no.3:1755-178
'58 (MIRA 11:6)

1. Iz laboratorii klinicheskoy fiziologii Sverdlovskogo nauchno-
issledovatel'skogo instituta vosstanovitel'noy khirurgii, travmato-
logii i ortopedii.
(SALIVARY GLANDS--TRANSPLANTATION)

KROL', N.G.

Study of hyperkinesia by integrating muscle potential. Zhur. nevr.
i psich. 59 no.1:45-50 '59. (MIRA 12:3)

1. Laboratoriya klinicheskoy fiziologii (zav. - dots. N.G. Krol')
Sverdlovs'kogo nauchno-issledovatel'skogo instituta vosstanovitel'noy
khirurgii travmatologii i ortopedii.
(MOVEMENT DISORDERS, physiol.
hyperkinesia, integration of musc. potentials (Rus))

KROL', N.G.

Use of the method of muscle biopotential integration in evaluating
the effectiveness of treating patients with athetosis. O.
travm. 1 protex. 22 no. 2135-39 F '61. (MIFB 14-3)
(ATHETOSIS)

KROL', N.G.

Thermal asymmetry in spastic hemiparesis with athetosis.
Eksp. issl. po fiziol., biokhim. i farm. no.3:61-67 '61

(MIRA 16:12)

1. Sverdlovskiy nauchno-issledovatel'skiy institut travmato-
logii i ortopedii.

RR 14, G. F.

Krol', G. F. - "The role of psychogenic factors in the appearance of malaria psychoses", Trudy Astrakh. nos. med. in-ta, Vol. IX, 1943, p. 97-101.

S: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statc, No. 2, 1949).

Крол', С. Р. - "Malaria psychoses", (Proposed candidate's Dissertation), Faculty of Astrakh. Gos. med. in-ta, Vol. IX, 1943, p. 152-66.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statей, No. 4, 1942).

Krol', C.F.

25994 Krol', C.F. *Travny Mozga I Cervonicheskaya Bolezni. V SP: Tretiery
Vosstanovit. Lecheniya Invalidov Otechest'. Vozny. Astrakhan', 1948, S. 125-37.*

SO: *Letopis' Zhurnal Statey, No. 30, Moscow, 1948*

KROL', O.F.; CHERNOV, V.I.; SHIPOVALOV, Yu.V.; KHAN, G.A.

"Saryarkit," a new mineral. Zap. Vses. min. ob-va 93 no. 2;
147-155 '64.
(MIRA 17:6)

TSIMKHES, I.L., prof.; SUKMANOVA, Ye.N.; KROL', P.B.

Organization of first aid for accidents in the construction of the
Gor'kiy Hydroelectric Power Station. Zdrav.Ros.Feder. 2 no.5:21-24
May '58. (MIRA 11:5)

1. Iz Gor'kovskogo nauchno-issledovatel'skogo instituta ortopedii i
travmatologii i bol'nitay No.1 Gor'kovskogo Gidroelektrostroya.
(FIRST AID IN ILLNESS AND INJURY)

DANIYALOV, G.D.; KROL', R., red.; NAUMENKO, V., tekhn.red.

[Socialist transformation in Daghestan from 1920 to 1941]
Sotsialisticheskie preobrazovaniia v Dagestane, 1920-1941 gg.
Makhachkala, Dagestanskoe knizhnoe izd-vo, 1960. 541 p.
(Daghestan--Economic conditions) (MIRA 14:4)

KhOL, R.B..

New design of the float flowmeter. Sakh.prom. 36 no.9:39-40
S '62. (MIRA 16:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy i eksperimental'no-konstruktorskiy institut prolov'stvennogo mashinostroyeniya.

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000826620009-8

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000826620009-8"

KOŁ, S.; KONOPACKI, J.; PAWLIKOWSKI, J.

Polish machine tools at the 28th Poznan International Fair. p. 203.

Mechanik. Warszawa, Poland. Vol. 32, no. 5, May 1957.

Monthly List of East European Accessions (EEAI) LC, Vol. 9 no. 2, 1960.
Uncl.

KROL, S.

Instructions on forestry for February. p. 37

IAS POLSKI. (Ministerstwo Leśnictwa oraz Stowarzyszenie Naukowo-Technic,ne
Inżynierow i Technikow Leśnictwa i Drzewictwa) Warszawa, Poland. Vol. 29,
no. 1, Jan. 1955

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb. 1960

Uncl.

KROL, S; MILLER, S.

What looks like this year's spring campaign for afforestation. p. 7

LAS POLSKI. (Ministerstwo Lesnictwa oraz Stowarzyszenie Naukowo-Techniczne
Inżynierów i Techników Lesnictwa i Drzewnictwa) Warszawa, Poland. Vol. 29,
no. 2, Feb. 1955

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb. 1960

Uncl.

KPOL,S.

Instructions on forestry for March. p.12

LAS POLSKI. (Ministerstwo Leśnictwa oraz Stowarzyszenie Naukowo-Techniczne
Inżynierów i Techników Leśnictwa i Drzewnictwa) Warszawa, Poland
Vol.29, no.2, Feb. 1955

Monthly list of East European Accessions (EEAI) LC, Vol.9, no.2, Feb.1960

Uncl.

KROL,S

Spring work in afforestation. p.37

LAS POLSKI. (Ministerstwo Leśnictwa oraz Stowarzyszenie Naukowo-Techniczne
Inżynierów i Techników Leśnictwa i Drzewnictwa) Warszawa, Poland
Vol.29, no.3, Mar. 1955

Monthly list of East European Accessions (EEAI) Lc, Vol.9, no.2, Feb. 1960

Uncl.

KROL,S.

Afforestation work in May. p.37

LAS POLSKI. (Ministerstwo Lasniczka oraz Stowarzyszenie Naukowo-Techniczne
Inżynierów i Techników Leśnictwa i Drzewnictwa) Warszawa, Poland
Vol.29, no.4 Apr. 1955

Monthly list of East European Accessions (EEAI) 16, Vol.9, no.2, Feb. 1860

Unc1.

KROL, S.

What new has been brought about by training in Bialowiera Forest. p. 10.

LAS POLSKI. (Ministerstwo Lesnictwa oraz Stowarzyszenie Naukowo-Techniczne
Inżynierów i Techników Lesnictwa i Drzewnictwa) Warszawa, Poland.
Vol. 29, no. 5, May 1959.

Monthly list of East European Accessions (EWA) LC, Vol. 1, no. 2, Feb. 1960

Uncl.

KROL, S.

Instructions for forest planting in June. p. 37.

LAS POLSKI. (Ministerstwo Lesnictwa oraz Stowarzyszenie Naukowo-Techniczne Inżynierów i Techników Leśnictwa i Drzewnictwa) Warszawa, Poland.
Vol. 29, no. 5, May 1959.

Monthly list of East European Accessions (EMI) LC, Vol. 9, no. 2, Feb. 1960

Uncl.

KROL, S.

Krol, S. Do not neglect cultivation works in nurseries and plantations, p. 40

LAS POLSKI

Vol. 29, No. 6, June 1956

Warszawa, Poland

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 10 Oct. 56

KROL, S.

KROL, S. Afforestation work in September. p. 42.

Vol. 29, no. 8, Aug. 1955

LAS POLSKI

AGRICULTURE

Poland

See: East European Accession, Vol. 6, No. 5, May 1957

KROL, S.

KROL, S. Looking for better afforestation work. p. 3.

Vol. 29, no. 9, Sept. 1955.

LAS POLSKI
AGRICULTURE
Poland

So: East European Accession, Vol. 6, No. 5, May 1957

22.7

KROL, S.

KROL, S. Afforestation work in the fall. p. 40.

Vol. 29, no. 9, Sept. 1955

LAS POLSKI
AGRICULTURE
Poland

So: East European Accession, Vol. 6, No. 5, May 1957

KROL, Stanislaw

Phenotypic variability of *Calluna Vulgaris* (L.) Salisb.
in forest associations of *Vaccinio-Piceion*. Prace nauk
roln i lesn 15 no.1:69-114 '63.

1. Silvicultural Botanical Institute, Higher Agricultural
School, Poznan.

KROL, Tamara

For air passenger convenience. Grazhd.av. 17 no.4:19-20
Ap '60. (MIRA 13:9)
(Airports--Management)

KROL', T.V.

Effect of interoceptive signals from human gastric chemoreceptors
on the functional state of the cerebral cortex. Uch. zap. IGU
no.222:196-205 '57. (MLRA 10:2)

1. Laboratoriya fiziologii analizatorov Leningradskogo Gosudarstven-
nogo universiteta.
(STOMACH--INNervation) (CEREBRAL CORTEX)

KROL', T.M.

Relationship between the threshold of visual sensation and the speed
of the intensity increase of the stimulation. Uch. zap. LGU №.239:
166-171 '58. (MIRA 12:1)

1. Laboratoriya fizielegii analizatorov Fizielegicheskogo instituta
Leningradskogo gosudarstvennogo universiteta.
(VISION)

GAVRILOVA, N.I.; KROL', T.M.

Work at the seminar on neurodynamics. Vest. IOU 13 no.3:152-154 '58.
(NERVOUS SYSTEM) (MIRA 11:5)

KROL', T.M.

Relation between the absolute threshold of visual sensation and
the gradient of a stimulus shorter than the "effective time".
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1. Fiziologicheskiy institut imeni A.A. Ukhtomskogo, Leningrad.
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1. Leningradskiy ordena Lenina gosudarstvennyy universitet imeni
A.A. Zhdanova.

(VISION)

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KROL', TS. I., kandidat tekhnicheskikh nauk; OSTROVSKIY, N.A., kandidat
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DANTSIG, N.M., professor.; GLAGOLEVA, T.A., kandidat tekhnicheskikh nauk.; KROL',
TS. I., kandidat tekhnicheskikh nauk.; SHAYKHOVICH, A.S., kandidat
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1. Vsesoyuznyy svetotekhnicheskiy institut.
(Factories--Lighting)

BELOVA, L.T., kand.tekhn.nauk; EROL', TS.I., kand.tekhn.nauk

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1. Vsesoyuznyy svetotekhnicheskiy institut.
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KROL', T.S. I... kand. tekhn. nauk

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1. Vsesoyuznyy svetotekhnicheskiy institut.
(Factories--Lighting)

KROL', TS.I., kand.tekhn.nauk

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1. Vsesoyuznyy svetotekhnicheskiy institut.
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AYZENBERG, Yu.B., inzh.; KROL', TS. I., kand.tekhn.nauk

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1. Vsesoyuznyy svetotekhnicheskiy institut.
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IVANOVA, N.S., kand.tekhn.nauk; KROL', T.S.I., kand.tekhn.nauk;
OSTROVSKIY, M.A., kand.tekhn.nauk; SHEFTEL', Ye.B., kand.tekhn.nauk;
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1. Vsesoyuznyy svetotekhnicheskiy institut.
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KROL', TS.I., kand.tekhn.nauk

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1. Vsesoyuznyy svetotekhnicheskiy institut.
(Electric lighting--Standards)